

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (currently amended) A computer-implemented method for use in creating a plan to reposition a patient's teeth from a set of initial tooth positions to a set of final tooth positions, the method comprising:

receiving an initial digital data set representing the teeth at the initial positions, wherein receiving the initial digital data set comprises receiving data obtained by scanning the patient's teeth or a physical model thereof;

generating a set of intermediate positions toward which the teeth will move while moving from the initial positions to the final positions; and

generating a plurality of one or more appliances having cavities and wherein the cavities of successive appliances have different geometries shaped to receive and reposition teeth from the initial positions to the final positions.

41. (currently amended) The method of claim 30, wherein rendering the graphical representation comprises downloading data to a remote computer. ~~at which a human view wishes to view the graphical representation.~~

48. (currently amended) A computer program, residing on a tangible storage medium, for use in creating a plan to reposition a patient's teeth from a set of initial tooth positions to a set of final tooth positions, the program comprising executable instructions operable to cause a computer to:

receive an initial digital data set representing the teeth at the initial positions, wherein receiving the initial digital data set comprises receiving data obtained by scanning the patient's teeth or a physical model thereof;

generate a set of intermediate positions toward which the teeth will move while moving from the initial positions to the final position; and

generate a plurality of one or more appliances having cavities and wherein the cavities of successive appliances have different geometries shaped to receive and reposition teeth from the initial positions to the final positions.

63. (currently amended) A system for repositioning a patient's teeth from a set of initial tooth positions to a set of final tooth positions, the system comprising:

an input component that receives an initial digital data set representing the teeth at the initial positions, wherein receiving the initial digital data set comprises receiving data obtained by scanning the patient's teeth or a physical model thereof;

a path-generating component that generates a set of intermediate positions toward which the teeth will move while moving from the initial positions to the final positions, and

a component to generate a plurality of one or more appliances having cavities and wherein the cavities of successive appliances have different geometries shaped to receive and reposition teeth from the initial positions to the final positions.

80. (currently amended) A computer-implemented method for use in determining whether a patient's teeth can be moved from a first set of positions to a second set of positions, the method comprising:

receiving digital data sets representing the teeth at the first set of positions and the second set of positions, wherein receiving the digital data sets comprises receiving data obtained by scanning the patient's teeth or a physical model thereof;

determining whether any of the teeth will collide while with each other moving to the second set of positions; and

generating a plurality one or more appliances having cavities and wherein the cavities of successive appliances have different geometries shaped to receive and reposition teeth from the initial positions to the final positions.